

Success Story

Tippett Studio



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Tippett Studio Ramps Up VFX Production Pipeline With SGI InfiniteStorage Solutions

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Head of Operations,
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Tippett Studio, the renowned Academy Award®-winning visual effects facility in Berkeley, Calif., needed to store and manage the massive amounts of data expected to be generated in creating the very complex and very special visual effects for a number of recent and yet-to-be-released Hollywood blockbusters. From computer-generated stunt doubles for title characters to the CG creation of entire worlds, the dazzling eye candy Tippett needed to produce for *The Matrix: Revolutions*, *Stepford Wives*, *Hellboy* and *Starship Troopers 2* is typical of the current data explosion at special effects facilities everywhere: to meet studio deadlines, the mountains of visual effects data that need to be readily available to hundreds of computer graphics artists simultaneously could not possibly be done with existing storage infrastructure. Tippett, a long-time SGI customer employing more than 225 artists, designers, engineers, technical directors and animators, again turned to Silicon Graphics compute power and expertise to meet their immediate and future needs.

Tippett tapped SGI and SGI Professional Services to design and implement an SGI® InfiniteStorage storage area network (SAN) solution that would incorporate their existing SGI storage system, provide the 14TB of storage needed immediately, and easily scale to larger data storage and management capabilities in the future, as they expand into producing full-length animated feature film and mixed live-action and CGI features. Additionally, the SAN needed to connect Tippett’s artists’ workstations—a heterogeneous mix of Silicon Graphics® Octane2™ visual workstations and Linux® OS-based workstations and servers for effects and rendering.

Tippett Studio purchased an InfiniteStorage SAN comprised of SGI® TP9500 storage, two 8-processor SGI® Origin® 350 metadata servers, one 4-processor Origin 350 and two 16-port Brocade® Fibre Channel switches. Tippett was able to leverage its current SGI infrastructure and add it into the SAN under



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the control of SGI® CXFS™ shared filesystem, SGI® Performance Co-Pilot™ monitoring system and SGI® FailSafe™ high-availability software, supporting a total of 14 terabytes of storage. Tippet's film recorder host computers were also added to the SAN as CXFS clients. The existing infrastructure includes a recently purchased SGI® Origin® 300 fileserver that manages their tape robot, an Origin® 2100 server being used as a backup metadata server and an SGI® TP9400 storage array.

"The beauty of the SGI InfiniteStorage system is that it enables us to utilize our legacy storage as well as provide a very flexible system that allows us to scale the amount of storage that's on the SAN," says Dan McNamara, head of operations, Tippet Studio. "We can also scale the number of SGI CXFS clients on the SAN. So, if we are bound in terms of the number of the NFS ops the servers can handle, then we can also scale those up appropriately. When we first added the SGI solution, we were working on a couple of specific sequences for *The Matrix: Revolutions* that are entirely computer graphics-generated with a very high level of detail. That's pretty hard on a production pipeline, but SGI CXFS easily performs the heavy lifting and improves production speeds admirably."

Tippet also incorporated SGI Failsafe into the system, according to McNamara, "so that we would have confidence that the SAN will present NFS to the end-user clients at all times. A really big plus is that it also enables us to take servers down for maintenance and have the end-users almost invisibly fail-over and connect to the backup server, away from the server that we just took out for maintenance. This is all done without having to make

announcements and reboot workstations—it's seamless to the end-user."

All the Effects, None of the Bottlenecks

In addition to the approximately 140 effects shots for *The Matrix: Revolutions*, the flexible and heavy-duty SGI InfiniteStorage system assisted Tippet Studio to work on three other films. The early summer Paramount Pictures release, *Stepford Wives*, is a comedic remake of the 1975 suburban horror classic. Tippet created visual effects sequences totaling about 90 effects shots.

Simultaneously, the SGI InfiniteStorage system also handled the heavy workflow for the 110 difficult effects shots for the just-released *Hellboy* (adapted from the Dark Horse comic), which included various CG-created creatures and CG stunt doubles for actors, including *Hellboy* himself. McNamara recalls, "For most sequences, we added CG characters into environments that were shot on first- and second-unit plate photography, which requires scanning film plates and compositing characters into them."

For an entire underwater sequence, he added, "the set was shot dry for wet: the water, the caustics, the debris and the characters were all created in our render pipeline. The final composites are very impressive."

For *Starship Troopers 2*, directed by Tippet Studio founder Phil Tippet, all of the 100-plus visual effects were completed in-house, as well as the total editorial. Digital set extensions were created and fans of the original sci-fi flick can count on lots of ever more realistic computer-generated bugs, huge swarms of many different creepy-crawlies, and, of course, dynamite

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"bugs vs. Troopers" battle sequences, all served by the robust and reliable SGI InfiniteStorage system, installed and integrated by SGI Professional Services.

Tippet Studio, like many other visual effects, digital film labs, and high-end post-production companies, currently rely—and many are turning to—SGI InfiniteStorage solutions, reaping the subsequent efficiencies and management benefits to scale to their rapidly expanding data management needs, while also trying to keep the management of their systems as simple as possible.

"The fact that we can scale it easily, utilizing existing storage, is very good," concludes McNamara. "Bringing the backups of the system for our tape library onto the SAN, so that backups are not happening over the primary network, is a big benefit as well. And, our director of technology reported that this is one of the most seamless installs of a storage system he's ever been through. We are very happy with the SGI InfiniteStorage SAN solution."

